

Claims 72, 77 and 80 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Saito in view of Born (US 6,625,880).

Applicants respectfully traverse these rejections in view of the amended claims and the following comments.

Discussion of September 12, 2006 Telephone Interviews with Examiner

On September 12, 2006 Applicants' undersigned counsel conducted a telephone interview with the Examiner and discussed the differences between Applicants' pending claims and the disclosure of Saito.

Applicants' counsel pointed out that Saito discloses detecting a short circuit between the conductor member 2 and ground due to damage to the outer insulating layer 6, and not an arc between one of the current-carrying inner wires 3, 4, and 5 and the conductor member 2 due to damage of the insulating layer of one of the inner wires 3, 4, and 5 (See, Col. 6, lines 11-13; Figures 1 and 2 of Saito). Applicants' counsel indicated that Applicants' independent claim 1 is contrary to Saito as it specifies a detector element which detects an arc originating from the current carrying inner wires (e.g., arc 28 from current carrying inner conductor 18 shown in Applicants' Figure 1 and Figure 2).

As discussed with the Examiner, Saito does not disclose or suggest a device for detecting an arc from the inner wires 3, 4, 5. Rather, Saito only discloses detecting a short circuit between the conductor member 2 and ground due to damage of the outer insulating layer 6. As indicated to the Examiner, Saito simply does not discuss the problem of an arc which can originate from the current-carrying inner wires 3, 4, and 5. The Examiner agreed that Saito does not disclose a detector element that detects an arc originating from a current-carrying inner conductor as claimed by Applicants.

As also discussed with the Examiner, if conductor member 2 of Saito is damaged (i.e., by an arc from the inner wires 3, 4, 5) and the outer layer is not, then the potential at comparator 8 (Figure 2 of Saito) will remain the same and no fault will be detected. Thus, as acknowledged by the Examiner, the device of Saito is not equipped to detect an arc originating from a current-carrying inner conductor, as claimed by Applicants.

Further, it was explained to the Examiner that with Applicants' invention, an electrical property of the detector element (i.e., conductor member 2 of Saito) is not changed when shorted to ground through the outer insulating layer 6, only the potential across the conductor member 2 is changed. This is not a change in the resistance (an electrical property) of the conductor member, as the resistance of the conductor member 2 remains the same whether or not a short is present. The Examiner acknowledged that Saito does not disclose a detector element which changes in its electrical property when a short circuit from the current-carrying inner conductor occurs.

It should be further pointed out that Applicants' claim 1 specifies that the electrical or optical property of the detector element is irreversibly changed when a local arc originating from the current-carrying inner conductor occurs. This means that, for example, the resistance of the detector element is irreversibly changed by the arc, due to, for example, mechanical damage to or deformation of the detector element caused by the arc (see, e.g., Applicants' specification, page 7, last para. and page 9, last para.). In contrast, in Saito it is only the potential across the conductor member 2 which changes due to the short. This change in the potential in Saito is not irreversible, as once the short is removed, the potential of the conductor member returns to its original value. Saito does not disclose or remotely suggest detecting an irreversible change to an electrical or optical property of a detector element due to an arc originating from a current-carrying inner conductor.

Similar arguments apply equally to Applicants' independent claims 59, 60, 79 and 80.

As a result of the telephone interview, the Examiner agreed that Saito does not disclose the features of Applicants' independent claims and agreed to withdraw the rejections in view of Saito.

As Saito does not disclose each and every element of the invention as claimed, the rejections under 35 U.S.C. § 102(b) are believed to be improper, and withdrawal of the rejections is respectfully requested. See, *Akamai Technologies Inc., supra*.

Further, in view of the foregoing it is respectfully requested that the 35 U.S.C § 103(a) rejections based on Saito be withdrawn.